

Algebra 2 Q1 Test 1 Review Key

$$1) \frac{\sqrt{48}}{\sqrt{3}} = \sqrt{16} = 4 \quad \boxed{A}$$

$$2) (\sqrt{2}\sqrt{3} - 3\sqrt{2})(\sqrt{2}\sqrt{3} - 3\sqrt{2})$$

$$4\sqrt{9} - 6\sqrt{6} - 6\sqrt{6} + 9\sqrt{4}$$

$$4(3) - 12\sqrt{6} + 9(2)$$

$$12 - 12\sqrt{6} + 18$$

$$30 - 12\sqrt{6} \quad \boxed{C}$$

$$3) (5\sqrt{2})^2 = 25\sqrt{4} = 25(2) = 50 \quad \boxed{B}$$

$$4) \frac{\sqrt{128} - \sqrt{72}}{\sqrt{8}} = \frac{\sqrt{128}}{\sqrt{8}} - \frac{\sqrt{72}}{\sqrt{8}} = \sqrt{16} - \sqrt{9} = 4 - 3 = 1 \quad \boxed{B}$$

$$5) 2\sqrt{3}(3\sqrt{6} - 3\sqrt{3})$$

$$6\sqrt{18} - 6\sqrt{9}$$

$$6\sqrt{9}\sqrt{2} - 6(3)$$

$$6(3)\sqrt{2} - 18$$

$$18\sqrt{2} - 18 \quad \boxed{D}$$

$$6) 4\sqrt{12} + 3\sqrt{48}$$

$$4\sqrt{4}\sqrt{3} + 3\sqrt{16}\sqrt{3}$$

$$4(2)\sqrt{3} + 3(4)\sqrt{3}$$

$$8\sqrt{3} + 12\sqrt{3}$$

$$20\sqrt{3} \quad \boxed{D}$$

$$7) 4\sqrt{18} + 3\sqrt{75} + 2\sqrt{45} - 2\sqrt{50}$$

$$4\sqrt{9}\sqrt{2} + 3\sqrt{25}\sqrt{3} + 2\sqrt{9}\sqrt{5} - 2\sqrt{25}\sqrt{2}$$

$$4(3)\sqrt{2} + 3(5)\sqrt{3} + 2(3)\sqrt{5} - 2(5)\sqrt{2}$$

$$12\sqrt{2} + 15\sqrt{3} + 6\sqrt{5} - 10\sqrt{2}$$

$$2\sqrt{2} + 15\sqrt{3} + 6\sqrt{5} \quad \boxed{A}$$

$$8) \frac{\sqrt{18}}{\sqrt{9}\sqrt{2}} = \frac{\sqrt{9}\sqrt{2}}{\sqrt{9}\sqrt{2}} = 1 \quad \boxed{3\sqrt{2}}$$

$$9) \sqrt{a^2b^3} = \sqrt{a^2b^2}\sqrt{b} = ab\sqrt{b} \quad \boxed{ab\sqrt{b}}$$

$$10) \sqrt{36x^7y^2} = \sqrt{36x^6y^2}\sqrt{x} = 6x^3y\sqrt{x} \quad \boxed{6x^3y\sqrt{x}}$$

$$\begin{aligned}
 11) \quad & \sqrt{32} + \sqrt{8} \\
 & \sqrt{16} \sqrt{2} + \sqrt{4} \sqrt{2} \\
 & 4\sqrt{2} + 2\sqrt{2} \\
 & \boxed{6\sqrt{2}}
 \end{aligned}$$

$$\begin{aligned}
 12) \quad & 3\sqrt{4a^3} - 6\sqrt{9a^3} \\
 & 3\sqrt{4a^2} \sqrt{a} - 6\sqrt{9a^2} \sqrt{a} \\
 & 3(2a)\sqrt{a} - 6(3a)\sqrt{a} \\
 & 6a\sqrt{a} - 18\sqrt{a} \\
 & \boxed{-12\sqrt{a}}
 \end{aligned}$$

$$\begin{aligned}
 13) \quad & 4\sqrt{3} \cdot 2\sqrt{8} \\
 & 8\sqrt{24} \\
 & 8\sqrt{4} \sqrt{6} \\
 & 8(2)\sqrt{6} \\
 & \boxed{16\sqrt{6}}
 \end{aligned}$$

$$\begin{aligned}
 14) \quad & \sqrt{3ac} \cdot \sqrt{12a^2c} \\
 & \sqrt{36a^3c^2} \\
 & \sqrt{36a^2c^2} \sqrt{a} \\
 & \boxed{6ac\sqrt{a}}
 \end{aligned}$$

$$\begin{aligned}
 15) \quad & \frac{\sqrt{60}}{\sqrt{5}} = \frac{\sqrt{12}}{\sqrt{4} \sqrt{3}} \\
 & \boxed{2\sqrt{3}}
 \end{aligned}$$

$$16) \quad \frac{6}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{6\sqrt{3}}{3} = \boxed{2\sqrt{3}}$$

$$17) \quad \frac{4}{6\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{4\sqrt{2}}{6 \cdot 2} = \frac{4\sqrt{2}}{12} = \frac{\sqrt{2}}{3} = \boxed{\frac{\sqrt{2}}{3}}$$